

What is claimed is:

1. Painting equipment in which a workpiece is fed to functional processing stations, in order, by a conveyance device to perform a series of operations from painting to baking and drying, characterized in that the conveyance device is
5 provided with a shuttle feed mechanism for conveying a conveyance frame for supporting the workpiece from an upstream side of the functional processing stations toward a downstream side of the functional processing stations using a shuttle feed method, and a self-propelled mechanism for allowing the conveyance
10 frame to cyclically travel by itself from the downstream side of the functional processing stations toward the upstream side of the functional processing stations.

2. The painting equipment according to claim 1, wherein the conveyance frame is provided with a carriage which travels outside a booth of each of the functional processing stations, and a workpiece supporting arm which is supported
15 by the carriage and extends within the booths, wherein the workpiece supporting arm is rotatably provided around an arm axis by a rotational mechanism.

3. The painting equipment according to claim 1, comprising a cyclically traveling passage, wherein the cyclically traveling passage is composed of a shuttle
20 feed passage, a self-propelled feed passage, and a manual feed passage for connecting the shuttle feed passage and the self-propelled feed passage, wherein the shuttle feed passage is provided with a cylinder unit for feeding the conveyance frame from the upstream side to the downstream side in order, and the self-propelled feed passage is provided with a slope to allow the conveyance frame to return to a
25 workpiece supply section side by its own weight.

4. The painting equipment according to claim 2, wherein a rotational positioning mechanism is provided on the downstream side of the functional

processing stations to control the rotational position of the workpiece supporting arm at a fixed location.

5 5. The painting equipment according to claim 2, wherein the mechanism for rotating the workpiece supporting arm around the axis is provided with a chain which is provided along the shuttle feed passage, and a sprocket which engages a section of the chain traveling in a direction opposite to a direction of travel of the conveyance frame to transmit a driving force to the axis of the workpiece supporting arm.

6. The painting equipment according to claim 3, wherein a rotational positioning mechanism is provided on the downstream side of the functional processing stations to control the rotational position of the workpiece supporting arm at a fixed location.

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7. The painting equipment according to claim 3, wherein the mechanism for rotating the workpiece supporting arm around the axis is provided with a chain which is provided along the shuttle feed passage, and a sprocket which engages a section of the chain traveling in a direction opposite to a direction of travel of the conveyance frame to transmit a driving force to the axis of the workpiece supporting arm.

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